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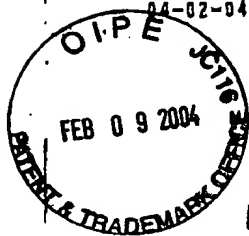
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IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: Hidetsugu FUKUYAMA et al.

For: Catalyst for hydrocracking of heavy oils and method
of hydrocracking heavy oils

Serial No.: 09/560 047

Group: 1764

Filed: April 27, 2000

Examiner: Norton

Attorney docket

No.: Furuya Case 1380

The Commissioner of Patents

P.O. Box 1450

Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

I, Hidetsugu FUKUYAMA, the undersigned, hereby declare
as follows:

That I am one of the co-inventors of the invention
described and claimed in the patent application Serial No.
09/560 047; and

That I incorporate the below described test data in the
prosecution of the instant patent application.

That I carried out additional test procedures and results
of which are described below.

Catalysts comprising iron and active carbon were prepared
to have properties shown in Table A, changing in the MCH
conversion rate only, in the same manner as shown in the instant
application except for carrying 5% of iron thereon.

Hydrocracking was carried out with a Middle East VR
Distillation Residual Oil and each obtained catalyst at the

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reaction temperature of 708° K at the reaction pressure of 7 MPa for the reaction time of 90 minutes at the catalyst concentration of 5 wt.% in a 1 liter semi-batch stirred autoclave.

Test results are shown in Table A and a graph thereof, together with test conditions.

It is noted from the test results that the MCH conversion rate of 40-50% provides the hydrocracking with an unexpected improvement in view of suppression of coke generation.

It is added that active carbon was treated with an acid to obtain an elevated MCH conversion rate or with an alkali to obtain a decreased one.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: February 4, 2004

Hidetatsu Fukuyama
Hidetatsu FUKUYAMA

Attachments: Table A and graph

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Table A shows reaction results of active carbon catalyst changing in an MCH conversion rate

Table A

catalyst	Fe amount [wt%]	MCH conversion rate [%]	conversion of 525°C+ [%]	yield of coke [%]	specific surface area [m ² /g]	total pore volume [ml/g]	mesopore volume ratio [%]	average pore diameter [nm]	remarks
Active Carbon B	5	54	77.4	2.7	874	1.0	87	4.6	the invention treated with 10% aqueous nitric acid solution
High_MCH-AC(B)-1	5	87	80.8	11.0	955	1.1	87	4.6	treated with 10% aqueous nitric acid solution
High_MCH-AC(B)-1	5	87	81.8	11.3	955	1.1	87	4.6	treated with 46% aqueous amine solution
Low_MCH-AC(B)-1	5	42	74.7	2.7	839	1.0	89	4.8	treated with 80% aqueous amine solution
Low_MCH-AC(B)-2	5	34	75.8	2.4	793	0.9	90	4.8	

